

REMARKS

Claims 5-43 are pending in the application with the present amendments. The independent claims 5, 24, 32 and 39 are amended herein, and amendments are made to some of the claims which depend from these claims in order to correct certain informalities or for the purpose of conforming the claims to the language of the independent claims. In addition, new claims 40-43 are presented herein for the Examiner's consideration.

The undersigned wishes to thank Examiner Rampuria and Primary Examiner Khatri for the courtesy extended by them in granting the telephone interview which was conducted on February 23, 2005. During the interview, the undersigned discussed the claims in relation to U.S. Patent 6,031,992 to Cmelik et al. ("Cmelik") which was used in the Office Action to reject all of the previously pending claims. Specifically, the undersigned pointed out the distinction of the claimed invention over Cmelik in that Cmelik neither teaches nor suggests a two-step method of: 1) analyzing a plurality of first instructions by an information processing system en masse . . . to produce information representing an information flow in accordance with the first instructions; and 2) generating the target instructions based on the information representing the information flow.

However, the Examiner indicated that the term "information flow", as previously recited in claims 5, 24, 32 and 39, was not sufficiently detailed to fully distinguish the invention from Cmelik. The Examiner indicated that if the independent claims in the application were amended to more specifically define the term "information flow" in a manner such as described in the Specification, viz. at pp. 15-20, that these claims would then likely overcome the rejections made over Cmelik.

Accordingly, claims 5, 24, 32 and 39 are amended herein in the manner indicated by the Examiner as making these claims allowable over *Cmelik*. As amended herein, applicant submits that the presently amended claims are now fully distinguished over *Cmelik* and, therefore, are in condition for immediate allowance.

A central distinguishing feature of the invention is the claimed two-step approach of generating target instructions. Such approach begins by analyzing the first instructions to produce information representing an information flow, and then generating target instructions based on that information representing the information flow. Clearly, *Cmelik* neither teaches nor suggests such concept. As described in *Cmelik*, a first set of instructions are merely translated to a second set of instructions executable on a "host" processor ("host" being the term which corresponds to the "target" processor in applicant's disclosure). As further described in *Cmelik*, after translation into second instructions, various operations are performed to optimize the second instructions. Clearly, *Cmelik* neither teaches nor suggests a step of analyzing first instructions en masse to produce information representing the information flow as a prerequisite to generating the second instructions based on such information.

While the above distinction alone is a sufficient basis for distinguishing the invention from *Cmelik*, the term "information flow" is now more specifically recited herein, in a manner which responds to the Examiner's objection to that term. Thus, claims 5, 24, and 32 and 39 as amended herein now specifically recite that the information produced by analyzing the plurality of first instructions represents a flow of information to be handled efficiently by the target processor to achieve results on the target processor equivalent to the results intended to be achieved by the first instructions.

Clearly, substantial additional distinguishing details have been added to these claims, which details are neither taught nor suggested by Cmelik or any other reference of record in the application. These claims now recite that 1) the result of the analyzing step must be to produce information representing a flow of information to be handled by the target processor; 2) that the information must represent a flow of information which is equivalent to the results intended to be achieved by the first instructions; and 3) the information must further represent a flow of information which is to be handled efficiently.

Cmelik neither teaches nor suggests producing information which represents a flow of information to be handled efficiently by the target processor and using such information to then generate the actual target instructions. Rather, as indicated above, Cmelik merely describes a method in which first instructions are initially translated into "host" instructions for operating the host processor. Only after such translations are performed are the host instructions then optimized, thus skipping the step of analyzing the first instructions to produce information representing the information flow, as claimed in the independent claims 5, 24, 32 and 39.

Moreover, other passages of Cmelik cited by the Examiner merely relate to a method by which a program, written in a high-level language, is automatically compiled to produce a program executable on an application specific integrated circuit ("ASIC"). The compiling of high-level language instructions into ASIC instructions is the direct antithesis of the subject matter recited in claims 9, 26 and 33, in which the first instructions are recited to be according to a first machine language and of a type executable by a first processor. Clearly, a high-level language requiring compilation as

described in *Cmelik* is the opposite of "instructions according to a first machine language and of a type executable by a first processor," as recited in claims 9, 26, 33 and 41.

New claims 40-43 recite features which are neither taught nor suggested by *Cmelik*. New claim 40 recites omitting an operation that is encoded by a given one of the plurality of first instructions from the information flow when the operation is overridden by another operation encoded by a second one of said plurality of first instructions. New claim 41 recites that the plurality of first instructions are in accordance with a first machine language, and that the plurality of first instructions are executable by a first processor but not executable by a target processor. On the other hand, the target instructions are in accordance with a target machine language and are executable on a target processor. By contrast, *Cmelik* neither teaches nor suggests a method of converting first instructions to target instructions in which the first instructions are in accordance with a first machine language, and are executable on a first processor but not executable on the target processor.

Nor does *Cmelik* teach or suggest the features of claim 42. Claim 42 recites that the first instructions specify a first number of transfers between a register of the first processor and a memory associated with the first processor. Claim 42 also recites that the target instructions specify a target number of transfers between a register of the target processor and a memory associated with the target processor, and that the target number is reduced in relation to the first number.

Claim 43 is also distinguished from *Cmelik*, in that claim 43 recites mapping a usage of target registers of the target processor in accordance with the target instructions to a usage of first registers of the first processor in accordance with the first instructions, based on the information representing

the information flow, and that the mapping varies with time in accordance with the equivalent results sought to be achieved by executing the target instructions on the target processor.

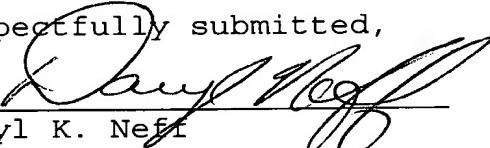
Specific support for the amendments to the previously presented claims is provided, *inter alia*, at p. 16, lns. 9-14 of the Specification. In addition, general support for the concepts claimed is provided in FIGS. 2 and 3 and the accompanying portions of the Specification. Support for new claims 40-43 is provided, *inter alia*, at pages 15-18 of the Specification.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited. If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: May 10, 2005

Respectfully submitted,

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